

1 What is claimed is:

2 1. A web service system allowing two or more web services to autonomously
3 communicate in a conversation via documents, where the documents used by the two or
4 more web services may require transformation, said system comprising:

5 a plurality of conversation definition language (CDL) description files, wherein
6 each of the respective CDL description files defines document types, transitions and
7 interactions of a conversation; and

8 a conversation controller controlling conversation for at least one web service and
9 having access to the plurality of CDL description files, the conversation controller
10 handling a plurality of inbound and outbound documents, and utilizing a plurality of CDL
11 description files to determine document types for each of the inbound and outbound
12 documents, and to determine transitions and interactions of a conversation, wherein the
13 conversation controller is capable of utilizing a transformational CDL (TCDL)
14 description file, the TCDL being a CDL extended with transformational elements.

15 2. The web service system as recited in claim 1, wherein the use of a TCDL
16 file results in automatic transformation of a document valid for a first web service into a
17 transformed document valid for a second web service

18 3. The system as recited in claim 2, wherein a TCDL file is generated by an
19 associated web service.

20 4. The system as recited in claim 2, further comprising a plurality of
21 transformational conversation definition language (TCDL) description files accessible by
22 the conversation controller, wherein each TCDL file defines document types, transitions,
23 interactions and at least one document transformation of a conversation.

24 5. The system as recited in claim 2, wherein each CDL file includes
25 transformational elements.

26 6. The system as recited in claim 2, further comprising at least one additional
27 conversation controller, wherein each conversation controller is used by a corresponding
28 web service.

29 7. The system as recited in claim 2, further comprising a registry, wherein the
30 registry holds information corresponding to a plurality of CDL and TCDL files and
31 associated web services, the information being retrievable by a conversation controller to
32 determine an appropriate CDL/TCDL file to use for a given web service.

33 8. A computer readable medium containing a data structure for defining
34 document transformations in a web service conversation between two or more web

10 9. The computer readable medium as recited by claim 8, wherein the section of the
11 data structure identifying document transformations is a subsection of the section defining
12 interactions.

13 10. The computer readable medium as recited in claim 8, wherein the section of the
14 data structure identifying document transformations identifies a corresponding stylesheet
15 document, the corresponding document comprising elements defining attributes, fields
16 and computations related to a required transformation.

17 11. The computer readable medium as recited in claim 10, wherein the identified
18 stylesheet is a virtual single document comprised of a plurality of linked documents.

19 12. A memory for storing data for access by at least one conversation controller
20 managing a conversation between web services, comprising:

21 a first section stored in memory defining document types for a plurality of
22 inbound and outbound documents in a conversation;

23 a second section stored in memory defining interactions of a conversation;

24 a third section stored in memory defining a flow of a conversation; and

25 a fourth section stored in memory identifying document transformations in a
26 conversation, wherein a document transformation is necessary to transform a document
27 used by a first web service into a document used by a second web service.

28 13. The memory as recited in claim 12, wherein the section of the data structure
29 identifying document transformations is a subsection of the section defining interactions.

14. The memory as recited in claim 12, wherein the section of the data structure identifying document transformations identifies a corresponding stylesheet document, the corresponding document comprising elements defining attributes, fields and computations related to a required transformation.

- 1 15. The memory as recited in claim 14, wherein the corresponding stylesheet
2 document is stored in a second memory accessible by the conversation controller.
- 3 16. The memory as recited in claim 14, wherein the identified stylesheet is a virtual
4 single document comprised of a plurality of linked documents.
- 5 17. The memory as recited in claim 16, wherein the plurality of linked documents are
6 stored in at least one additional memory accessible by the conversation controller.
- 7 18. A method for automatically transforming documents in a conversation between
8 two or more web services, said method comprising steps of:
- 9 retrieving at least one transformational conversation description language (TCDL)
10 description file for use by a conversation controller;
- 11 determining, by the conversation controller, whether a document needed in a
12 transition from a first state in the conversation to a second state in the conversation
13 requires a transformation; and
- 14 automatically transforming the document needed in the transition, by the
15 conversation controller, if the retrieved TCDL description file has a transformational
16 element for the needed document transformation.